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Epidemiologic Notes and Reports Possible Transfusion-Associated Acquired Immune Deficiency Syndrome (AIDS) -- California

CDC has received a report of a 20-month old infant from the San Francisco area who developed unexplained cellular immunodeficiency and opportunistic infection. This occurred after multiple transfusions, including a transfusion of platelets derived from the blood of a male subsequently found to have the acquired immune deficiency syndrome (AIDS).

The infant, a white male, was delivered by caesarian section on March 3, 1981. The estimated duration of pregnancy was 33 weeks; and the infant weighed 2850 g. The mother was known to have developed Rh sensitization during her first pregnancy, and amniocentesis done during this, her second, pregnancy showed the fetus had erythroblastosis fetalis. The infant had asphyxia at birth and required endotracheal intubation. Because of hyperbilirubinemia, six double-volume exchange transfusions were given over a 4-day period. During the 1-month hospitalization following birth, the infant received blood products, including whole blood, packed red blood cells, and platelets from 19 donors. All blood products were irradiated.

After discharge in April 1981, the infant appeared well, although hepatosplenomegaly was noted at age 4 months. At 7 months, he was hospitalized for treatment of severe otitis media. Oral candidiasis developed following antibiotic therapy and persisted. At 9 months of age, he developed anorexia, vomiting, and then jaundice. Transaminase levels were elevated, and serologic tests for hepatitis A and B viruses and cytomegalovirus were negative; non-A non-B hepatitis was diagnosed.

At 14 months of age, the infant developed neutropenia and an autoimmune hemolytic anemia and thrombocytopenia. Immunologic studies showed elevated serum concentrations of IgG, IgA, and IgM, decreased numbers of T-lymphocytes, and impaired T-cell function in vitro. Following these studies, he was begun on systemic corticosteroid therapy for his hematologic disease. Three months later, a bone marrow sample, taken before steroid therapy began, was positive for *Mycobacterium avium-intracellulare*. Cultures of urine and gastric aspirate, taken while the infant received steroids, also grew *M. avium-intracellulare*. The infant is now receiving chemotherapy for his mycobacterial infection. He continues to have thrombocytopenia.

The parents and brother of the infant are in good health. The parents are heterosexual non-Haitians and do not have a history of intravenous drug abuse. The infant had no known personal contact with an AIDS patient.

Investigation of the blood products received by the infant during his first month of life has revealed that one of the 19 donors was subsequently reported to have AIDS. The donor, a 48-year-old white male resident of San Francisco, was in apparently good health when he donated blood on March 10,

1981. Platelets derived from this blood were given to the infant on March 11. Eight months later, the donor complained of fatigue and decreased appetite. On examination, he had right axillary lymphadenopathy, and cotton-wool spots were seen in the retina of the left eye. During the next month, December 1981, he developed fever and severe tachypnea and was hospitalized with biopsy-proven *Pneumocystis carinii* pneumonia.

Although he improved on antimicrobial therapy and was discharged after a 1-month hospitalization, immunologic studies done in March 1982 showed severe cellular immune dysfunction typical of AIDS. In April 1982, he developed fever and oral candidiasis, and began to lose weight. A second hospitalization, beginning in June 1982, was complicated by *Salmonella* sepsis, perianal herpes simplex virus infection, encephalitis of unknown etiology, and disseminated cytomegalovirus infection. He died in August 1982. Reported by A Ammann, MD, M Cowan, MD, D Wara, MD, Dept of Pediatrics, University of California at San Francisco, H Goldman, MD, H Perkins, MD, Irwin Memorial Blood Bank, R Lanzerotti, MD, J Gullett, MD, A Duff, MD, St. Francis Memorial Hospital, S Dritz, MD, City/County Health Dept, San Francisco, J Chin, MD, State Epidemiologist, California State Dept. of Health Svcs; Field Svcs Div, Epidemiology Program Office, AIDS Activity, Div of Host Factors, Center for Infectious Diseases, CDC.

Editorial Note

Editorial Note: The etiology of AIDS remains unknown, but its reported occurrence among homosexual men, intravenous drug abusers, and persons with hemophilia A (1) suggests it may be caused by an infectious agent transmitted sexually or through exposure to blood or blood products. If the infant's illness described in this report is AIDS, its occurrence following receipt of blood products from a known AIDS case adds support to the infectious-agent hypothesis.

Several features of the infant's illness resemble those seen among adults with AIDS. Hypergammaglobulinemia with T-cell depletion and dysfunction are not typical of any of the well-characterized congenital immunodeficiency syndromes (2), but are similar to abnormalities described in AIDS (3). Disseminated *M. avium-intracellulare* infection, seen in this infant, is a reported manifestation of AIDS (4). Autoimmune thrombocytopenia, also seen in this infant, has been described among several homosexual men with immune dysfunction typical of AIDS (5). Nonetheless, since there is no definitive laboratory test for AIDS, any interpretation of this infant's illness must be made with caution.

If the platelet transfusion contained an etiologic agent for AIDS, one must assume that the agent can be present in the blood of a donor before onset of symptomatic illness and that the incubation period for such illness can be relatively long. This model for AIDS transmission is consistent with findings described in an investigation of a cluster of sexually related AIDS cases among homosexual men in southern California (6).

Of the 788 definite AIDS cases among adults reported thus far to CDC, 42 (5.3%) belong to no known risk group (i.e., they are not known to be homosexually active men, intravenous drug abusers, Haitians, or hemophiliacs). Two cases received blood products within 2 years of the onset of their illnesses and are currently under investigation.

This report and continuing reports of AIDS among persons with hemophilia A (7) raise serious questions about the possible transmission of AIDS through blood and blood products. The Assistant Secretary for Health is convening an advisory committee to address these questions.

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